



# Industrial research using eBIC for Industry

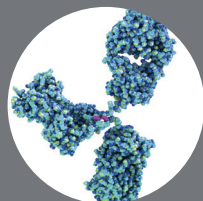
## CRYO-ELECTRON MICROSCOPY

Recent advances in detector technology combined with the latest generation of stable and automated microscopes have dramatically improved the resolution of macromolecular structures achievable with cryo-EM and seen a rush to adopt the technique in rational drug design and vaccine programmes.

The electron Bio-Imaging Centre (eBIC) for Industry is an integrated facility at Diamond Light Source providing pharmaceutical and nanotechnology companies with access to state-of-the-art research equipment and expertise in the field of cryo-Electron Microscopy.

Our preparation facilities, dedicated screening and data collection microscopes, automated data processing systems and expert scientific support provide a lower barrier to entry for researchers wanting to apply this powerful technique to their challenging scientific questions.

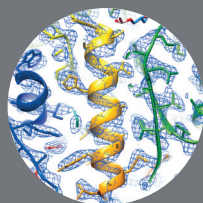
## Applications



### Antibodies and vaccine research

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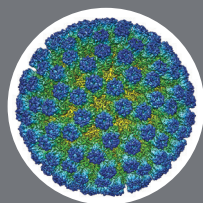
Map the interactions between antibodies and antigens in biological drug and vaccine design studies.



### Drug discovery/ rational design

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Understand and identify protein-target compound interactions during rational drug design studies.



### Characterisation of nanotechnologies/ nanomedicines

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Fully understand the structure/function relationships of protein-based biotechnologies and drug delivery applications.

## Why use eBIC for Industry?

- Integration with Diamond's Synchrotron-based complementary techniques;
- Dedicated microscopes and experienced staff to support user requirements;
- Access to the latest generation of microscopes and detectors;
- In-house screening facility to lower the risk and costs of cryo-EM data collection;
- Operational support with the capacity to confidentially handle large numbers of industrial experiments and visits;
- Secure, high-performance scientific computing enabling real-time evaluation of data quality during collection;
- On-site manufacturer support and expertise from Thermo Fisher.

## Benefits for Structural Biology

### Cryo-EM enables you to

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- Achieve structural information without the need to crystallise your target protein;
- Study macromolecules in as close to a native state as possible or in their cellular context;
- Identify and characterise dynamic biological states by observing multiple conformations;
- Image protein complexes and protein-ligand interactions.



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## State-of-the-art Microscopes

Using the latest generation of microscopes and detectors, including the Gatan K3, we can improve biological structure resolution whilst increasing screening throughput with minimal contamination.

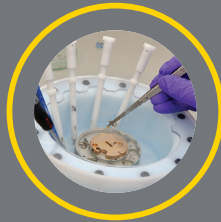


## Experienced scientific support and full service offerings

Our experienced team of microscopists are accustomed to working with industrial clients, so understand your needs and challenges.

Whether adopting or applying cryo-EM to your research, they can support you every step of the way.

Flexible service offerings cover the entire cryo-EM workflow, from sample preparation to model building, and supporting scientific consultancy throughout ensure that you get the most out of the facility whether you are new to EM, or an experienced microscopist.



**Grid preparation**



**Screening**



**Data processing and analysis**



**High resolution data acquisition**



**For further information**

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